REMARKS

Claims 1-18 are pending. No claim has been amended.

Rejection Under 35 U.S.C. §102(e)

Claims 1-18 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Benda et al. (US 6,937,992) ("Benda"). This rejection is respectfully traversed.

The system disclosed by Benda is quite different from that claimed. The objective of Benda is to assure that truck capacity is fully utilized before a truck is dispatched to a single (or at most two) customers in need of a number of commodities sourced originally from many different locations. On the other hand, the claimed invention relates to the routing of already full trucks of a single commodity from a single (or at most a few locations) to 15 to 30 destinations in a local area within in a day so as to minimize the time taken to deliver that commodity. This difference of objectives leads to very different operational environments and technical solutions.

Exemplary claim 1 relates to a scheduling and routing system for delivering a consumable to customers via commercial delivery vehicles. Such a system comprises:

> a delivery forecasting system that maps certain customers to delivery profiles for similarly situated customers to provide statistical parameters for inventory replenishment of the consumable; and
>
> an integrated inventory replenishment, scheduling and routing system that extends cost minimization for inventory replenishment of the consumable for individual deliveries by a commercial delivery vehicle to include road routing economics of making several deliveries in sequence before replenishment of the commercial delivery vehicle.

The teachings of Benda do not relate, *inter alia*, to a system that "extends cost minimization for inventory replenishment of the consumable for individual deliveries by a commercial delivery vehicle to include road routing economics of making several deliveries in sequence before replenishment of the commercial delivery vehicle."

On the contrary, Benda uses Cross Docking Facilities (CD) to accept nearly full loads of merchandise on many trucks from manufacturers and/or distribution centers. At the cross dock, the merchandise is reorganized and/or commingled such that similarly destined merchandise are placed on the same vehicle and sent to the ultimate customer. (Benda, col. 7-

lines 31-34). The essential operational characteristic is a multi-commodity two-stage transportation process where the objective is to assemble single stop shipping plans between manufacturer- suppliers to an intermediary CD location and single stop shipping plans between the CD and a ultimate customer location. The geographical setting may be regional or national thereby restricting the number of stops a truck makes before returning for another load. Since there are at most one or two stops involved, the sequencing of stops to reflect travel times is not the issue and indeed the optimization techniques proposed by Benda consider the costs of transportation as predetermined. Benda discusses monitoring but not estimating stock-on hand and the delivery requirements to satisfy a number of inventory needs including safety stock (Benda, col. 8 lines 9-14 and 41-44). These demands are used to trigger delivery requirements that are assumed fixed in the Benda optimization technique. Thus, while Benda addresses the problem of keeping trucks full for deliveries, Benda does not address the problem of routing already full trucks of a single commodity so as to minimize the time taken to deliver that commodity.

The claimed method and system implements a single stage transportation process that does not involving Cross Docking as taught by Benda. The present invention optimizes delivery schedules where trucks typically make 15 to 30 stops in a local area within in a day possibly returning to reload once or twice before the end of the workday. The first part of the challenge is the optimization of the stop sequence since that has a profound influence on cost. Unlike Benda, the transportation costs are not predetermined and therefore reference to "road routing economics" is used to account for delivery variation based on road speeds and distances. The second part of the challenge relates to forecasting. In the claimed system and method, the stop sequence optimization considers geographic and inventory replenishment concurrently. This is accomplished by having the optimization consider both "cost minimization for inventory replenishment of the consumable for individual deliveries by a commercial delivery vehicle" and "road routing economics of making several deliveries in sequence before replenishment of the commercial delivery vehicle" as claimed to determine the timing of a delivery. Such a technique is not taught by Benda.

The predominant technology for Benda are network optimization models involving thousands of variables. Network optimization is generally seen as an instance of mathematical programming. These network optimization techniques include "transshipment" problems used in Benda and have been in use for many years. These are techniques for determining the flows of pre-established volumes of commodities over fixed time frames. Transshipment models generally have a structure that permit the calculation of a global optimum without an exhaustive enumeration of the possible solutions.

In contrast, the predominant technologies for the claimed system and method are two-fold. The first are Probability Inventory Models that statistically analyze the historical behavior of a single variable in order to predict future behavior. The second technology also deals with network optimization but in an environment so complex that transshipment techniques are no longer practical. The source of this complexity comes from having the variables involved not be independent (as they are in transshipment models) as well as not having fixed timeframes. So an independent literature has developed Based on "heuristic optimization techniques" Such teachings are not provided by Benda.

To summarize, the teachings of Benda address a different delivery problem and do not provide any teachings particularly relevant to the claimed delivery forecasting system and method that "maps certain customers to delivery profiles for similarly situated customers to provide statistical parameters for inventory replenishment of the consumable" or to an "integrated inventory replenishment, scheduling and routing" system and method that includes "cost minimization for inventory replenishment of the consumable for individual deliveries by a commercial delivery vehicle" and "road routing economics of making several deliveries in sequence before replenishment of the commercial delivery vehicle." Benda does not deal with such a sequential delivery scheduling problem involving "making several deliveries in sequence before replenishment" and provides no relevant teachings to solving this problem.

The rejection of claims 1-18 as being anticipated by Benda is improper and withdrawal of this rejection is respectfully requested.

Conclusion

The present response is believed to obviate the prior art rejection of record. Issuance of a Notice of Allowability is respectfully requested.

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